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[27] Figure 3 shows the relative path of movement 50 of the Hall effect sensor 70 relative to the poles of the magnet 72. As can be appreciated, the movement path 50 is non-parallel to a line Z drawn between the poles of the magnet 72. Moreover, another line drawn perpendicular to the line between the poles, line Y, is also at an angle to the path 50. Thus, the length of path 50 can be designed to be at a maximum while still being within an acceptable distance of the poles. That is, the extent of path 50 is greater than the extent of the path Y, and much greater than the extent of a line drawn between the north and south poles of the magnet 72. In this manner, the distance over which the sensor arrangement 68 can sense relative movement is increased. As also shown in Figure 3, the Hall effect sensor 70 is at a center point 46 on which it lies on the path between the north and south pole. The axis extending between the north and south poles could be said to define a plane to extend perpendicularly to, and between the north and south poles. An extension of path 50 would pass through this plane.

[30] Figure 5B shows the Figure 5A embodiment, somewhat schematically, but to illustrate the movement. In this embodiment, the magnet 170 is a bar magnet having opposed pole faces 192 and 194. Again, the path of movement 190 of the sensor 172 relative to the magnet 170 is non-parallel to a line Z drawn between these pole faces, and non-parallel to a line perpendicular to the line drawn between the pole faces. Again, this will result in an increase in the travel and sensing distance provided by the inventive Hall effect displacement sensor.

[31] Figure 6 shows yet another embodiment 60. In embodiment 60, there are spaced magnets 62 and 64. Again, the path 66 of the sensor 68 is non-parallel to a line Z drawn between the pole set of either magnet 62 or 64, and is also at an angle relative to the line Y drawn perpendicular to the axis between the pole sets of either magnet 62 and 64.